

## CLAIMS

### What is claimed is:

1. A metadata enabled edge server for distributing a content object to a user over  
5 a network communication link in response to a user request, said metadata enabled edge server comprising:  
  
a server computer having a processor and memory coupled to said processor for executing computer program instructions, and at least one input/output port for receiving and sending communications from external entities;  
10 a storage device coupled to said server and storing metadata describing content objects accessible to said server including at least one location from where a particular one of said content object is stored and may be directed to said user; and  
  
a controller for distributing said content object to said user using said metadata and maintaining isochronous delivery of portions of said content over said network.  
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2. A metadata enabled edge server as in claim 1, wherein said controller includes a request response and playback procedure executing as software on said metadata enabled edge server.
- 20 3. A metadata enabled edge server as in claim 1, wherein said network comprises the Internet.
4. A metadata enabled edge server as in claim 1, wherein said network communication link comprises a packet switched communication link not in itself

having means for maintaining isochronous delivery of a content item separated into a plurality of packets for communication from said server to said requesting user.

5. A metadata enabled edge server as in claim 1, wherein said content items are  
5 internally accessible to said server computer.

6. A metadata enabled edge server as in claim 1, wherein said content items are externally accessible to said server computer.

10 7. A metadata enabled edge server as in claim 1, wherein said metadata database stores data selected from the set of content physical properties, content storage locations, content usage terms, content usage rights, content playback duration, content prefix cache status, content network routing cost information, and combinations thereof.

15 8. A metadata enabled edge server as in claim 1, wherein metadata also includes a prefix portion of the content or a low-resolution preview of the content.

9. A metadata enabled edge server as in claim 1, wherein said control means  
20 includes a request response and playback procedure.

10. A metadata enabled edge server as in claim 1, wherein said storage stores at least one content item that is intended to be rendered for presentation at a predetermined time rate.

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11. A metadata enabled edge server as in claim 1, wherein said at least one content item comprises a video content item having image element frames and audio elements that is intended to be rendered for presentation on a playback device at said
- 5 predetermined time rate so as to provide substantially the same visual and audio rendering to a viewer a when generated.
12. A metadata enabled edge server as in claim 11, wherein the amount of data comprising said video content item is greater than the amount of data that is
- 10 communicated in a packet over a packet switched Internet network.
13. A metadata enabled edge server as in claim 1, wherein the amount of data comprising said video content item is an amount of video content that when rendered in real-time at an intended playback rate would exceed ten minutes of broadcast
- 15 quality video.
14. A metadata enabled edge server as in claim 1, wherein the amount of data comprising said video content item is an amount of video content that when rendered in real-time at an intended playback rate would exceed 60 minutes of broadcast
- 20 quality video.
15. A metadata enabled edge server as in claim 1, wherein said video content item comprises substantially a full-length feature film in a video format.

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16. A metadata enabled edge server as in claim 1, wherein said network communication link comprises Internet infrastructure.
- 5 17. A metadata enabled edge server as in claim 1, wherein said network communication link comprises Internet infrastructure and Internet communication protocol.
18. A metadata enabled edge server as in claim 1, wherein said metadata is used to  
10 enables intelligent decisions to be made on system operation and content routing.
19. A metadata enabled edge server as in claim 1, wherein said metadata contains information about the actual content including its physical properties, possible locations of the content represented by the metadata, its usage terms.  
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20. A metadata enabled edge server as in claim 1, wherein said metadata includes a globally unique identifier describing the content object and at least one location at which said content object may be found.
- 20 21. A metadata enabled edge server as in claim 1, wherein said content object comprises a video content object having an amount of data requiring a plurality of packets for communication over a packet switched network, and said controller providing isochronous delivery from said identified content location to a playback device of said requesting user.

22. A system for distributing a content object to a user over a network communication link in response to a user request, said system comprising:

5 an origin server;

a plurality of edge servers each coupleable to said origin server over a communications network;

each said edge server being a metadata enabled edge server including:

10 a server computer having a processor and memory coupled to said processor for executing computer program instructions, and at least one input/output port for receiving and sending communications from external entities;

a storage device coupled to said server and storing metadata describing content objects accessible to said server including at least one location from where a particular one of said content object is stored and may be directed to said user; and

15 a controller for distributing said content object to said user using said metadata and maintaining isochronous delivery of portions of said content over said network.